

PATENTADJUSTABLE SPORTING EVENT TABLECROSS-REFERENCE

5. This application is a continuation-in-part application of United States Patent Application Serial No. 09/784,711, filed on February 15, 2001 and entitled "Adjustable Sporting Event Table".

BACKGROUND OF THE INVENTION

- 10 The present invention is generally directed to an adjustable table. More particularly, the present invention contemplates a portable, adjustable table for use in an arena or stadium.

- People gather in stadiums and arenas to be entertained for a multitude of events, including baseball games, football games, and car races. Some stadiums or arenas provide benches and others provide individual seats which are positioned close to each other in which viewers sit. In either case, the stadium seating is generally not designed for comfort, but to
15 maximize the capacity of the stadium. Therefore, the amount of space provided for each viewer to watch the event is generally small.

- Most stadiums and arenas do not provide a table or surface on which items can be rested while the viewer is seated. Although viewers will often consume food and beverages while watching the events, because seating is tightly spaced it is often difficult and/or
20 uncomfortable to balance or manage food and beverages in the confined allotment of space. Additionally, it is difficult to browse through an event program when grasping a drink or sandwich.

When viewing events on television, viewers often use "TV trays" to support their food

and beverages. TV trays are generally light weight so that they can be easily moved short distances to a desired location within the home. TV trays however are not designed to be transported in a vehicle or carried by an individual for longer distances, for example, from a parking lot to a seat within a stadium. Generally, events at a stadium draw many people, therefore, visitors must be able to manage the items they bring into the stadium amongst the large crowds of people. Items which are compact and light weight are preferable so that an individual can move more easily through the crowded areas.

It is also important that items used within a stadium are not too large. Not only are the seats placed closely together from side to side, but the rows of seating are also placed closely together. A narrow passageway in front of each row of seats is available for leg room and for other viewers to pass through to reach or leave their seat. Because the space in front of each viewer is limited, the typical "TV tray" will not fit in the passageway. It is therefore desirable to provide a table which can be supported with relatively narrow supports which do not occupy a large amount of floor space. In addition, it is desirable to provide a table which can be easily moved to clear the passageway in front of the row of seats to allow others to pass by.

The present invention provides an adjustable table which overcomes the problems presented in the prior art and which provides additional advantages over the prior art, such advantages will become clear upon a reading of the attached specification in combination with a study of the drawings.

OBJECTS AND SUMMARY OF THE INVENTION

A general object of an embodiment of the present invention is to provide a table which can be used in a small amount of space.

Another object of an embodiment of the present invention is to provide a table which
5 can be transported easily.

Yet another object of an embodiment of the present invention is to provide a surface upon which spectator can rest items.

A further object of an embodiment of the present invention to provide a table with adjustable height.

10 Yet a further object of an embodiment of the present invention is to provide a table which can be easily moved to clear a passageway in front of the user.

Briefly, and in accordance with the foregoing, the present invention discloses a table which can be used in a confined space and can be easily transported. The dimensions of the table are such that the table can be used in confined spaces such as a sporting event.

15 BRIEF DESCRIPTION OF THE DRAWINGS

The organization and manner of the structure and operation of the invention, together with further objects and advantages thereof, may best be understood by reference to the following description, taken in connection with the accompanying drawings, wherein like reference numerals identify like elements in which:

20 FIGURE 1 is a perspective view of a first embodiment of the table of the present invention in its upright form along with a user seated by the table in a typical stadium seating arrangement;

FIGURE 2 is a top plan view of the table shown in FIGURE 1;

FIGURE 3 is a cross-sectional view of the table shown in FIGURES 1 and 2 along
25 line 3-3 of FIGURE 2;

FIGURE 4 is a cross-sectional view of the table shown in FIGURES 1-3 along the line 4-4 of FIGURE 2;

FIGURE 5 is a bottom plan view of the table shown in FIGURES 1-4 in the

configuration used to transport the table;

FIGURE 6 is a top plan view of the table shown in FIGURES 1-5 being transported by a user;

5 FIGURE 7 is a perspective view of a second embodiment of the present invention in its upright form along with a user seated by the table in a typical stadium seating arrangement;

FIGURE 8 is a top plan of the table shown in FIGURE 7;

FIGURE 9 is a cross-sectional view of the table shown in FIGURE 7 along line 9-9 of FIGURE 8;

10 FIGURE 10 is a cross-sectional view of the table shown in FIGURES 7 and 8 along line 10-10 of FIGURE 8;

FIGURE 11 is a bottom elevational view of the table shown in FIGURE 7 in the configuration to be transported;

15 FIGURE 12 is a cross-sectional view of the table shown in FIGURE 7 along line 12-12 of FIGURE 8;

FIGURE 13 is a perspective view of the table of FIGURES 7-12 being transported by a user;

FIGURE 14 is cross-sectional view of a third embodiment of the table of the present invention; and

20 FIGURE 15 is a bottom elevational view of the table shown in FIGURE 14.

DETAILED DESCRIPTION OF THE ILLUSTRATED EMBODIMENT

While the invention may be susceptible to embodiment in different forms, there is shown in the drawings, and herein will be described in detail, a specific embodiment with the understanding that the present disclosure is to be considered an exemplification of the principles of the invention, and is not intended to limit the invention to that as illustrated and described herein.

A first embodiment of the present invention is shown in FIGURES 1-6; a second embodiment of the present invention is shown in FIGURES 7-13; and a third embodiment of the present invention is shown in FIGURES 14-15.

Attention is invited to the first embodiment of the table 10 shown in FIGURES 1-6. As shown in FIGURE 1, a user of the table 10 is seated on a bench 12 similar to those commonly used at stadiums and arenas. As shown, the bench 12 is comprised of a generally horizontal seat portion 12a and a vertical back support portion 12b. The back support portion 12b is not necessary for use of the present invention. Although FIGURE 1 shows the user seated at a bench 12, it is to be understood that the table of the present invention could also be used by a user seated in a chair.

The table 10 includes a horizontal member 14, two supports 16, and a supportive strap 18.

The horizontal member 14 of the table 10 has a top surface 20 which is generally rectangular in shape. An edge 22 depends from the perimeter of the top surface 20. The upper end 24 of each support 16 is preferably hingedly attached to the bottom surface of the horizontal member 14 by hinges 26. Each hinge 26 is centered and attached near the end of the horizontal member 14. The hinges 26 allow the supports 16 to be moved from a position perpendicular to the horizontal member 14 to a position parallel to the horizontal member 14. The hinges 26 are suitably constructed so as to prevent the supports 16 from pivoting more than ninety degrees. Thus, the support 16 can move from a position parallel to the horizontal member 14 ninety degrees to a position perpendicular to the horizontal member 14. However, the support 16 can not move beyond the position perpendicular to the horizontal member 14.

As shown in FIGURE 5, the hinges 26 are mounted at an angle relative to the horizontal member 14. Mounting the hinges in this manner allows from the supports 16 to fold under the horizontal member 14 as will be described herein. In the preferred embodiment, the supports 16 are made from hollow, telescoping poles 27a, 27b. The
5 telescoping poles 27a, 27b allow the height of the table 10 to be adjusted as desired by the user. In the preferred embodiment, the end of each vertical support 16 is covered with a rubber tip 28 to prevent the support 16 from sliding on the floor during use.

A generally U-shaped bracket 29 is fixed to the edge 22 on each end of the horizontal member 14 by suitable means. Each end of the supportive strap 18 is removably attached to
10 one of the brackets 29 on either end of the horizontal member 14. The supportive strap 18 is flexible and preferably made of cloth. In the preferred embodiment, a metal fastener with a closeable hook is provided on each end of the supportive strap 18. The hook is opened, placed around the bracket 29 and then closed to secure the hook to the bracket 29. In the preferred embodiment, the length of the supportive strap 18 can be adjusted to fit the
15 particular user.

When the table 10 is in use, the supports are pivoted so that they are perpendicular to the horizontal member 14. The supports are extended to the appropriate length such that the rubber tip 28 on each support 16 is positioned on the ground on either side of the user's legs and in front of the horizontal seat portion 12a of the bench 12 and the horizontal member 14
20 extends over the user's legs. The supportive strap 18 is placed behind the user's back and in front of the vertical back support portion 12b of the bench 12. The strap 18 prevents the table 10 from falling away from the user. The supports 16 contact the front surface 30 of the horizontal portion 12a of the bench 12 to prevent the table 10 from falling toward the user. Placement of the supports 16 against the front surface 30 of the horizontal portion 12a of the
25 bench 12 also provides greater stability for the table 10.

As the space allotted to each user in a stadium is typically limited, it is desirable that the table 10 will fit within the space allotted to each user. In the preferred embodiment, the horizontal member 14 is approximately twenty inches wide and five and one-half inches deep. It has been found that a table 10 which is approximately twenty inches wide will fit

within the space allotted for each user at most stadiums. It has also been found that a table 10 which is approximately five and one-half inches deep allows for the table 10 to be placed above the user's legs, without blocking the passageway in front of the user.

As shown in FIGURE 2, the table provides for a variety of features which assist the
5 user while seated. A tray 32 is slidably attached to the bottom surface of the horizontal member 14 by two tracks 34. The tray 32 provides an extra surface area on which items may be placed, for example, to hold a sandwich. A lip 35 is located at the front edge of the tray 32. To extend the tray 32 the user grasps the lip 35 and pulls the tray 32 outwardly from the horizontal member 14. The lip 35 also prevents the tray 32 from sliding completely under the
10 horizontal member 14 when the tray 32 is returned to its retracted position. The dimensions of the tracks 34 are such that the tray 32 is mounted closely to the bottom surface of the horizontal member 14. Thus, a relatively tight fit is created. Although the user must use force to extend the tray 32, when the tray 32 is pushed back under the horizontal member 14, the tray 32 will remain in place even when the table 10 is being transported. Alternatively, a
15 suitable latch could be used to secure the tray 32 in place.

A first aperture 36 is provided through the horizontal member 14 at a position spaced from the tray 32. A mesh material 38 is attached to the bottom surface of the horizontal member 14 by suitable means around the perimeter of the aperture 36 and depends from the bottom surface of the horizontal member 14 to create a pouch which can be used, for
20 example, to support a beverage.

A second aperture 40 is also provided through the horizontal member 14 and is spaced from the tray 32. A compartment 42 depends from the bottom surface of the horizontal member 14 around the perimeter of the aperture 40. A lid 44 is hingedly attached to the top surface 20 of the horizontal member 22 and covers the aperture 40. This lid 44 allows the
25 compartment 42 to be opened or closed. A small protrusion on the outer edge of the lid 44 mates with a groove in the horizontal member 14 to secure the lid 44 in the closed position. A tab 45 which extends from the lid 44 assists the user in opening the compartment 42. The compartment 42 can be used for storing small items such as, for example, a ticket stub or ear plugs. Preferably, the first aperture 36 is provided on one side of the tray 32 and the second

aperture 40 is provided on the opposite side of the tray 32.

A bag 46 is removably attached to the edge 22 of the horizontal member 14. In the preferred embodiment the bag 46 is attached to the edge 22 at a position opposite that of the seated user when the table 10 is in use. Although there are a variety of ways in which the bag 46 could be removably attached to the table 10, in the preferred embodiment, a hook and loop type fastener 48, such as the hook and loop fastener sold under the trademark VELCRO®, is used to attach the bag 46 to the table 10. The mating surfaces of the fastener 48 are a loop surface and a hook surface. A strip of hook type fastener 48a is attached to the edge 22 of the horizontal member 14 and a strip of loop type fastener 48b is attached to the top edge of the bag 46. The bag 46 can be attached to the table by pressing the loop type fastener 48b on the bag 46 to the hook type fastener 48a of the table 10. The bag can be used to store items such as, for example, event programs. The bag 46 can be removed from the table 10 by pulling the loop type fastener on the bag 48b away from the hook type fastener 48a on the table 10. Alternatively, the bag could, for example, be removably attached by using snaps or the like.

Finally, a container 50 is removably attached to said supportive strap 18. The container 50 includes a base portion and a lid and provides additional storage for small items. In the preferred embodiment, a chain is placed through an aperture in the container 50 the ends of the chain are placed around the supportive strap 18 and secured together so that the container is attached to the supportive strap 18.

Transportation of the table 10 can be easily accomplished. Before transporting the table, the user will slide the tray 32 underneath the horizontal member 14, and remove the bag 46 from the edge 22 of the horizontal member 14. The bag 46 can be folded and placed in the compartment 42 for storage. Next, the user collapses the telescoping supports 16 to shorten the supports 16. The user then folds the supports 16 underneath the table 10, as shown in FIGURE 5, so that the supports 16 are parallel to the top surface of the horizontal member 14. As described above, the hinges 26 are mounted to the bottom surface of the horizontal member 14 such that when the supports 16 are folded underneath the table 10 the supports 16 are slightly angled relative to the horizontal member 14. The depth of the edge 22 is of sufficient dimension so that when the supports 16 are in the folded position, the supports 16

are flush with the edge 22. Finally, the supportive strap 18 is placed over one of the user's shoulder across the chest and under the opposite arm, as shown in FIGURE 6. In the preferred embodiment, the length of the strap 18 is adjustable and thus allows for adjustable positioning of the table 10 upon the user when carried.

5 Attention is invited to the second embodiment of the invention shown in FIGURES 7-13. The table 100 is similar to the table 10, however, differences between the table 10 and the table 100 are described herein. The table 100 is shown in use by a user 102 seated on a bench 12. The bench 12 is comprised of a generally horizontal seat portion 12a and a vertical back support portion 12b. The back support portion 12b is generally perpendicular to the
10 horizontal seat portion 12a and is not necessary for use of the table 100. It is to be understood that the table 100 can be used in connection with essentially any variety of seats upon which a user is seated.

 The table 100 generally includes a horizontal member 104, a support member 106 generally perpendicular to the horizontal member 104, and a supportive strap 108 attached to
15 the horizontal member 104.

 The horizontal member 104 of the table 100 has a top surface 110 which is generally rectangular in shape and an edge 112 which depends from the perimeter of the top surface 110 and is generally perpendicular thereto. The edge 112 includes a front portion 112a, a left side portion 112b, a right side portion 112c and a rear portion 112d.

20 A drink aperture 116 is provided through the horizontal member 104. A mesh member 118 is attached to the perimeter of the drink aperture 116 and forms a pouch which hangs below the horizontal member 104 in which a beverage placed through the aperture 116 is supported.

 A aperture 120 is also provided through the horizontal member 104. A compartment
25 122 depends from the bottom surface of the horizontal member 104 around the perimeter of the aperture 120. A lid 124 is hingedly attached to the top surface 110 of the horizontal member 104 and covers the aperture 120 and the compartment 122. The lid 124 allows the compartment 122 to be opened or closed. A small protrusion on the outer edge of the lid 124 mates with a groove in the horizontal member 104 to secure the lid 124 in the closed position.

A depression 126 in the upper surface 110 of the horizontal member 104 allows the user to place a finger under the lid 124 to open the compartment 122. The compartment 122 can be used for storing small items such as, for example, a ticket stub or ear plugs. Preferably, the first aperture 116 is provided proximate one end of the table 100 and the aperture 120 is
5 provided proximate the opposite end of the table 100.

A bag 130 is removably attached to the outer surface of the front portion 112a of the edge 112. In the preferred embodiment, a first portion 132 of a hook and loop type fastener, such as the hook and loop fastener sold under the trademark VELCRO®, is attached to the outer surface of the front portion 112a and a second portion 134 of a hook and loop type
10 fastener is attached to the bag 130. The bag 130 is removably attached to the table 100 by mating the first and second portions 132, 134 of the hook and loop type fastener. The bag 130 can be used to store items such as, for example, event programs. Alternatively, the bag 130 could, for example, be removably attached by using snaps or the like.

As shown in FIGURE 9, the horizontal member 104 includes a receiving cup 140.
15 The receiving cup 140 is generally tubularly shaped and extends from the lower surface of the horizontal member 104. A thread is provided on the interior surface of the receiving cup 140.

The support member 106 is generally post-shaped and is formed from a first section 106a and a second section 106b. The first section 106a includes a first end 108 and a second end 110. The second section 106b includes a first end 112 and a second end 114. A thread is
20 provided proximate the first end 108 of the first section 106a on the outer surface thereof. A thread is provided proximate the second end 110 of the first section 106a on the inner surface thereof. A thread is provided proximate the first end 112 of the second section 106b on the outer surface thereof. The thread proximate the first end 108 of the first section 106a is mated with the thread of the receiving cup 140 to fix the first end 108 to the horizontal
25 member 104. The thread proximate the first end 112 of the second section 106b is mated with the thread proximate the second end 110 of the first section 106a. A rubber tip is provided over the second end 114 of the second section 106b. The second end 114 remains free and is placed in contact with the ground when the table is in use.

As best shown in FIGURES 9-11, a forward pair of U-shaped clamps 150a, 150b are

mounted to the lower surface of the horizontal member 104 proximate the front portion 112a of the edge 112 and a rearward pair of U-shaped clamps 152a, 152b are mounted to the lower surface of the horizontal member 104 proximate the rear portion 112d of the edge 112. The clamps 150a, 150b, 152a, 152b support the first and second sections 106a, 106b of the support 106 when the table is to be transported, as shown in FIGURE 11. Each clamp includes a pair of downwardly extending arms 151 and a pair of inwardly projecting protrusions 153.

The supportive strap 108 is formed from a flexible material and includes a first closeable hook 155 attached to a first end thereof and a second closeable hook 156 attached to a second end thereof. The length of the strap 108 can be adjusted as desired. An outwardly extending, generally U-shaped bracket 157 is mounted to the outer surface of the right side portion 112c of the edge 112 and an outwardly extending, generally U-shaped bracket 158 is mounted to the outer surface of the left side portion 112b of the edge 112. The first hook 155 is attached to the bracket 157 and the second hook 156 is attached to the bracket 158. The strap 108 is placed behind the back of the user as shown in FIGURE 1.

A container 160 is removably attached to the said supportive strap 108. The container 160 includes a base portion and a lid and provides additional storage for small items. In the preferred embodiment, a chain is placed through an aperture in the container 160 the ends of the chain are placed around the supportive strap 108 and secured together so that the container is attached to the supportive strap 108.

Use of the table 100 will now be described. To begin the user assembles the support 106 by mating the first end 112 of the second section 106b of the support 106 with the second end 110 of the first section 106a of the support 106. The first or fixed end 108 is then mated with the receiving cup 140 of the horizontal member 104. The second end or free end 114 of the second section 106b is placed on the ground between the user's feet and in front of the horizontal seat portion 12a of the bench 12 and the horizontal member 104 extends over the user's legs. The supportive strap 108 is placed behind the user's back and in front of the vertical back support portion 12b of the bench 12 and the closeable hooks 155, 156 are attached to the brackets 157, 158.

As the table 100 includes a single support 106, the table is capable of movement in many directions. The free end 114 of the support 106 acts as a pivot point for rotation. The directions of rotation will be defined from the perspective of a user seated at the table. Forward rotation of the table 100 is provided as the horizontal member 104 rotates away from the user about the pivot point provided by the free end 114. Rearward rotation of the table 100 is provided as the horizontal member 104 rotates toward the user about the pivot point provided by the free end 114. Clockwise rotation of the table 100 occurs when the table 100 rotates such that the right side 112c of the table 100 moves toward the ground. Counter-clockwise rotation of the table 100 occurs when the table 100 rotates such that the left side 112b of the table 100 moves toward the ground. Forward rotation of the table 100 is limited by the strap 108. As the table 100 rotates in the forward direction, any slack present in the strap 108 is eliminated and resistance provided by the user's back against the strap 108 prevents further rotation in the forward direction. Rearward rotation of the table 100 is limited as the table 100 contacts the body of the user or when the support member 106 contacts the forward edge of the horizontal portion 12a of the seat 12. Clockwise rotation of the table 100 is limited by the contact between the user's right leg and the support member 106 and by the resistance provided by the strap 108 against the users body. Counter-clockwise rotation of the table 100 is limited by the contact between the user's left leg and the support member 106 and by the resistance provided by the strap 108 against the user's body.

As the space allotted to each user in a stadium is limited, the rotational movement provided by the table provides significant advantages. For example, as the user is seated, he can position the table at a distance which is comfortable to him. If another individual needs to pass through the passageway in front of the user, the user can rotate the table 100 in the rearward direction allowing the individual to pass by. Thus, the user is not required to lift the table in order to clear the passageway. Rather, rotation about the pivot point provided by the free end 114 of the support is all that is required. It is desirable that the table 100 will fit within the space allotted to each user. In the preferred embodiment, due to the constraints on space typically associated with stadium type seating, the horizontal member 104 is approximately twenty inches wide and five and one-half inches deep.

The table 100 provides a convenient place to store several items a user may wish to have at an event and therefore provides freedom to the user's hands. In addition, the table 100 can provide a surface on which the user may rest his arms/elbows to provide relief to his back. The ease of rotation of the table as described above, does not confine the user to a particular position but rather allows the user a limited amount of space to move and stretch. In addition to the advantages described, the single support 106 of the table 100 utilizes less space than the support members 24 of the table 10, allowing additional room for the users legs.

Transportation of the table 100 can be easily accomplished. Before transporting the table, the user removes the bag 130 from the first portion 112a of the edge 112. The bag 130 can be folded and placed in the compartment 122 for storage. The users then removes the strap 108 from behind his back. Next, the support 106 is removed from the horizontal member 104 by unthreading the first end 108 of the first section 106a of the support 106 from the receiving cup 140. The first section 106a of the support 106 is then unthreaded from the second section 106b of the support 106. The user then inverts the horizontal member 104 such that the bottom surface of the horizontal member 104 faces upward. Next the user aligns the first section 106a with the clamps 150a, 150b and pushes the first section 106a downward. As the user pushes the first section 106a downward, the arms 151 of the clamps 150a, 150b will expand outward. As the user continues to push the first section 106a downward, the first section 106a will move beyond the protrusions 153 and the arms will spring inwardly to retain the first section 106a within the clamps 150a, 150b. The second section 106b is mounted within the clamps 152a, 152b in the same manner as the first section 106a is mounted within the clamps 150a, 150b. The depth of the edge 112 is of sufficient dimension so that when the first and second sections 106a, 106b of the support 106 are in the travel position, the first and second sections 106a, 106b of the support 106 are flush with the edge 22. Finally, the supportive strap 108 is placed over one of the user's shoulder across the chest and under the opposite arm, as shown in FIGURE 13. In the preferred embodiment, the length of the strap 108 is adjustable and thus allows for adjustable positioning of the table 10 upon the user when carried.

Attention is invited to a third embodiment of the table 200 shown in FIGURES 14 and 15. The table 200 is identical to the table 100 with the following exceptions.

Rather than a two piece support 106, the table 200 includes an adjustable length support 206. The support 206 includes a first section 206a and a second section 206b. The first section 206a includes a first end 208 and a second end 210. The first end 208 includes a thread on the outer surface thereof which mates with a thread in a receiving cup 240. The second section 206b of the support 206 includes a first end 212 and a second end 214. The first end 212 of the second section 206b, is positioned inside the first portion 206a. The second portion 206b can move upwardly and downwardly inside the first portion 206a to lengthen or shorten the support 206. A collar 213 is provided to secure the second section 206b relative to the first section 206a. Alternatively, protrusions are provided on the second section 206b which mate with apertures in the first section 206a to secure the second section 206b relative to the first section 206a. Thus, once the support 206 has been attached to the receiving cup 140, the table height can be adjusted by lengthening or shortening the support 206.

Unlike the table 100 which includes four clamps 150a, 150b, 152a, 152b, the table 200 includes only two clamps 252a, 252b. The clamps 252a, 252b are identical to the clamps 150a, 150b, 152a, 152b of the table 100. Because the support 206 can be shortened prior to clamping the support 206 to the bottom surface of the table 200, only two clamps are required rather than four.

Other than the adjustment of the length of the support 206, use and transportation of the table 200 is identical to use and transportation of the table 100.

While preferred embodiments of the present invention are shown and described, it is envisioned that those skilled in the art may devise various modifications of the present invention without departing from the spirit and scope of the appended claims.